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EXAMINER	
NGUYEN, HUY TRAM	
ART UNIT	PAPER NUMBER
1797	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/563,449	CALEMMA ET AL.	
	Examiner	Art Unit	
	HUY-TRAM NGUYEN	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *April 3, 2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-22, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Clark (US Patent No. 7,285,693 B2) in view of Chao et al. (US Patent No. 5,230,789).**

Regarding Claim 1, Clark reference discloses a process for the contemporaneous preparation of middle distillates and lubricating bases **(Column 3, Lines 52-58 and Column 6, Lines 49-52)** starting from a feedstock comprising a mix of prevalently paraffinic hydrocarbons obtained by means of a synthesis process from hydrogen and carbon monoxide, consisting of at least 30%, of a high- boiling fraction with a distillation temperature higher than 360°C **(Abstract and Column 2, Lines 19-22)**, comprising:

(i) at least one hydrocracking step, wherein said hydrocarbon mix is reacted with hydrogen at a temperature of between 200 and 450°C and a pressure of between 0.5 and 15 MPa, in the presence of a catalyst, for a time sufficient for converting at least 40% of said high-boiling fraction, into a fraction of hydrocarbons which can be distilled at temperatures lower than 360°C **(Abstract, step (a) and Column 3, Lines 13-31- temperature range of from 175°C to 380°C, pressure range of from 10 bar to 250 bar, conversion of at least 20wt % of fraction boiling below 370°C);**

(ii) at least one distillation step of the product of step (i) for separating at least a fraction of middle distillate and at least one high-boiling residue suitable for producing a lubricating base with an initial boiling point equal to or higher than 340°C **(Abstract, step (b) and Column 3, Lines 35-58 – gas oil precursor between 200°C to 400°C and higher boiling fraction)**,

wherein said hydrocracking step (i) is effected in the presence of a supported catalyst comprising:

(A) a support of an acidic nature consisting of a catalytically active porous solid, including silicon, aluminum, phosphorus and oxygen bonded to one another **(Column 2, Lines 49-58)**

(B) at least one metal with a hydro-dehydrogenating activity selected from groups 6 to 10 of the periodic table of elements, dispersed on said support (A) in an amount of between 0.05 and 5% by weight with respect to the total weight of the catalyst **(Column 2, Line 63-Column 3, Line 9 –Group VIII and 0.0005 to 5 parts by weight of carrier material).**

However, Clark reference does not specify that a catalytically active porous solid, including silicon, aluminum, phosphorus and oxygen bonded to one another in such a way as to form a mixed amorphous solid forming a single phase, characterized by an Si/Al atomic ratio of between 15 and 250, a P/Al ratio of at least 0.1, but lower than 5, a total pore volume ranging from 0.5 to 2.0 ml/g, an average pore diameter ranging from 3 nm to 40 nm, and a specific surface area ranging from 200 to 1000 m^2/g. Chao et al. reference discloses the claimed catalytically active porous solid composition **(Abstract).** It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the catalytically active porous solid support as taught by Chao et al, since Clark reference states at Column 2, Lines 45-46 that for the hydrogenation/hydroisomerization reaction of Clark, the catalyst may be chosen from those known to one skilled in the art as being suitable for this reaction.

Regarding Claim 2, Clark and Chao et al. references disclose the process according to claim 1, wherein said active support of the catalyst has a total pore volume of between 0.7 and 1.7 ml/g, a surface area of between 300 and 900 m^2/g and an average pore diameter of between 5 and 30 nm, an Si/Al ratio ranging from 20 to 200 and a P/Al ratio ranging from 0.3 to 3.5 **(Chao et al. – Abstract).**

Regarding Claim 3, Clark and Chao et al. references disclose the process according to claim 1, wherein the difference between 10% and 90% in the distribution curve of the pore dimensions of said active support of the catalyst, in included within a diameter range of between 2 and 40 nm **(Chao et al. - Abstract and Column 4, Lines 45-47).**

Regarding Claim 4, Clark and Chao et al. references disclose the process according to claim 1, wherein said catalyst comprises, in addition to said active support (A), binder consisting of an inert inorganic solid **(Clark – Column 3, Lines 9-12).**

Regarding Claim 5, Clark and Chao et al. references disclose the process according to claim 4, wherein said inert binder is selected from the group consisting of silica, alumina, clay, titanium oxide (TiO_2) or zirconium oxide (ZrO_2), boron oxide (B_2O_3) and mixtures thereof **(Clark – Column 4, Lines 33-45 - the binder for dewaxing catalyst can be used for hydroisomerization).**

Regarding Claim 6, Clark and Chao et al. references disclose the process according to claim 4 except for the binder is in an amount of 1 to 70% by weight, with respect to the weight of said inert binder and said amorphous support (A). It would have been obvious to one having ordinary skill in the art at the time the invention was made

to the claimed binder weight range, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller,* 105 USPQ 233.

Regarding Claim 7, Clark and Chao et al. references disclose the process according to claim 4, wherein said catalyst is in the form of pellets (Chao et al. – Column 4, Lines 19-20 – solid solution). However, neither Clark nor Chao et al. reference disclose that the pellets have dimensions of around 2-5 mm in diameter and 2-10 mm in length. It would have been obvious to one having ordinary skill in the art at the time the invention was made to claimed dimensions of the catalytic pellets, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller,* 105 USPQ 233.

Regarding Claim 8, Clark and Chao et al. references disclose the process according to claim 1, wherein said metal in component (B) of the catalyst is selected from the group consisting of nickel, molybdenum, tungsten, cobalt, platinum, palladium and mixtures thereof **(Chao et al. – Column 4, Lines 53-62)**

Regarding Claim 9, Clark and Chao et al. references disclose the process according to claim 1, wherein the concentration of said metal having a hydro-dehydrogenating activity ranges from 0.2 to 1% by weight with respect to the total weight of said catalyst **(Clark – Column 3, Lines 5-9).**

Regarding Claim 10, Clark and Chao et al. references disclose the process according to claim 1, wherein said feeding mix comprises a synthesis product of the Fischer-Tropsch type **(Clark – Abstract).**

Regarding Claim 11, Clark and Chao et al. references disclose the process according to claim 1 where in at least 80% by weight of said hydrocarbon mix consists of paraffins **(Clark – Column 2, Lines 8-15).**

Regarding Claim 12, Clark and Chao et al. references disclose the process according to claim 1, wherein said feeding mix consists for at least 80% by weight of linear paraffins having from 5 to 80 carbon atoms and an initial boiling point of between 45 and 675°C (by extrapolation) **(Clark - Column 2, Lines 22-33).**

Regarding Claim 13, Clark and Chao et al. references disclose the process according to claim 1, wherein said feeding mix comprises from 40 to 80% by weight of a high- boiling fraction which can be distilled at temperatures ≥360°C and from 20 to 60% by weight of middle distillate **(Clark – Column 3, Lines 27-57).**

Regarding Claim 14, Clark and Chao et al. references disclose the process according to claim 1, wherein said feeding mix has an initial boiling point of at least 260°C **(Clark – Column 2, Lines 30-33).**

Regarding Claim 15, Clark and Chao et al. references disclose the process according to claim 1, wherein said hydrocracking step (i) is run at a temperature of between 300 and 370°C and at a pressure of between 1 and 10 MPa, including the hydrogen pressure **(Clark – Column 3, Lines 13-18).**

Regarding Claim 16, Clark and Chao et al. references disclose the process according to claim 1, wherein said hydrocracking step (i) is effected with an initial (hydrogen) / (hydrocarbons) mass ratio of between 0.03 and 0.2 **(Clark – Column 3, Lines 24-26).**

Regarding Claim 17, Clark and Chao et al. references disclose the process according to claim 1, wherein the α conversion in said hydrocracking step (i) ranges from 60 to 90% **(Clark – Column 3, Lines 27-31).**

Regarding Claim 18, Clark and Chao et al. references disclose the process according to claim 1, wherein an aliquot of said high-boiling residue obtained in said step (ii) is recycled to the hydrocracking step (i) **(Clark – Column 3, Lines 31-34 and Column 6, Lines 58-59 and Figure 1, numeral 13).**

Regarding Claim 19, Clark and Chao et al. references disclose the process according to claim 1, wherein said high-boiling residue used for the production of lubricating bases is subjected to a de-waxing treatment **(Clark - Column 6, Lines 52-54 and Figure 1, numerals 10 and 11).**

Regarding Claim 20, Clark and Chao et al. references disclose the process according to claim 19, wherein said dewaxing step consists of a catalytic dewaxing **(Clark – Abstract, step (c)).**

Regarding Claim 21, Clark and Chao et al. references disclose the process according to claim 1, comprising, in addition, a hydrogenating treatment of the feed to said hydrocracking step (i) **(Clark – Column 6, Lines 40-43 and Figure 1, numeral 3).**

Regarding Claim 22, Clark and Chao et al. references disclose the process according to claim 1, wherein, before the hydrocracking step, a light fraction having a final boiling point lower than 380°C, is separated from said feed, by distillation, before the hydrocracking step **(Column 6, Lines 40-41 and Figure 1, numeral 4).**

Regarding Claim 25, Clark and Chao et al. references disclose the process according to claim 22, wherein said light fraction or a product obtained therefrom, is joined to at least a part, of said fraction of middle distillate obtained in step (ii) and sent to a fractionation step for the production of at least one fraction of middle distillate **(Clark – Column 6, Lines 47-50 and Figure 1, numeral 4, 7 and 8).**

5. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Clark (US Patent No. 7,285,693 B2) in view of Chao et al. (US Patent No. 5,230,789) and Benazzi et al. (WO02/48289 – using US Patent No. 7,267,758 B2 as US equivalent document).**

Regarding Claim 23, Clark and Chao et al. references disclose the process according to claim 22 except for said light fraction is subjected to a hydroisomerization treatment in the presence of a suitable bi-functional catalyst with a hydro dehydrogenating activity to obtain an isomerized mix. Benazzi et al. reference disclose this step **(Figure 1, numerals 7 and Column 12, Lines 50-55 – one or more reactors)**. It would have been obvious to one having ordinary skill in the art at the time the invention was made to add the hydroisomerization treatment step for the light fraction since it was known in the art to further treat a hydrocarbon fraction with hydroisomerization step to obtain desired products.

Regarding Claim 24, Clark, Chao et al. and Benazzi et al. references disclose the process according to claim 23 wherein said light fraction is subjected to a hydrogenating treatment, before the hydroisomerization treatment **(Benazzi et al. – Figure 1, numeral 2 - hydrotreatment zone).**

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUY-TRAM NGUYEN whose telephone number is (571)270-3167. The examiner can normally be reached on MON- THURS: 6:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HTN
1/29/08

/Walter D. Griffin/
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